## GEOMETRIC PROPORTIONS OF ANCIENT CHURCHES.

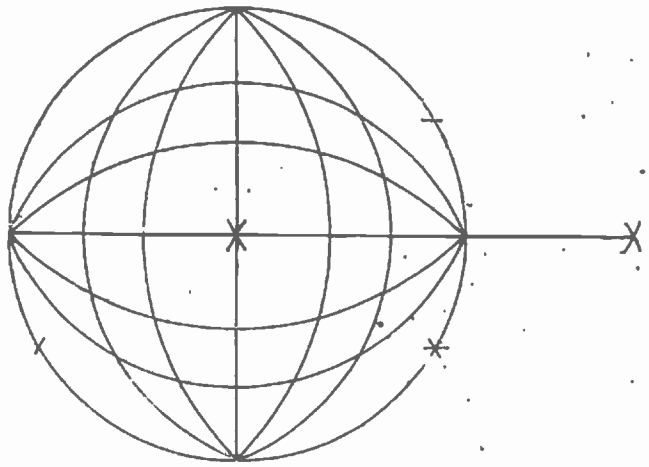

*Fig. 1.*

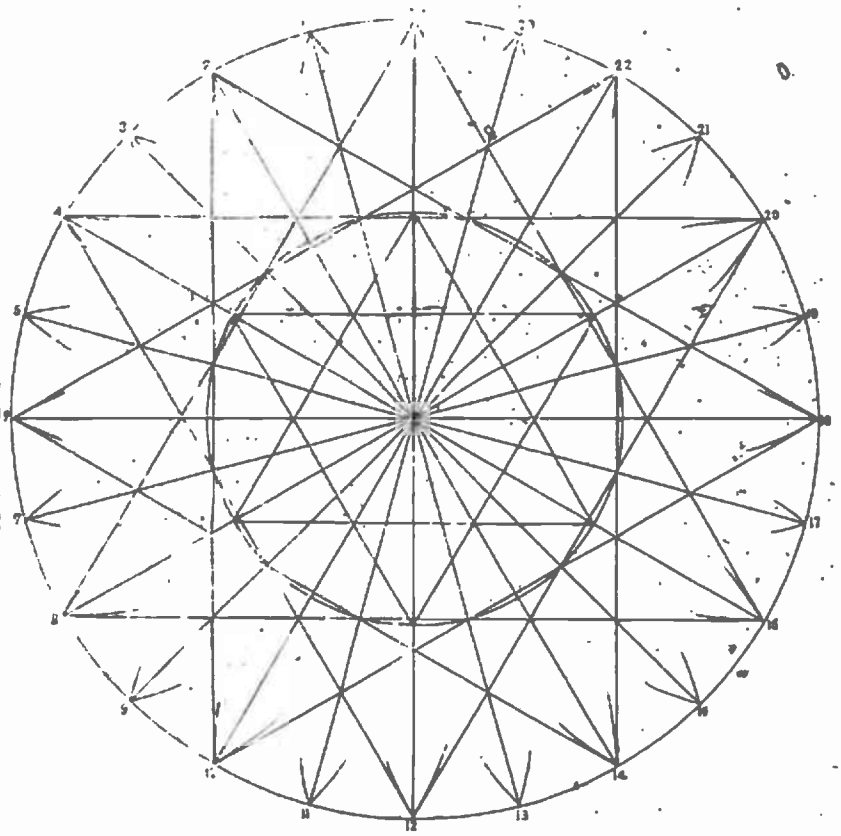

*Fig. 2.*

the centres of those of the choir from east to west: the trisection of the first great circle is the semi-diagonal of the choir; the vesica piscis, or double spherical triangle, gives the length of the choir from the base of the western triangles in the great circle; the probationers' rooms, or, as Mr. Clarkson terms them, "the novices' rooms" on the south were similarly proportioned by central intersections in the circular hall. The plan of Little Mapleton is worked nearly the same as this, but the choir is the radial division of the outer circle in breadth, and its length to the centre of the apse is the double triangle extended from the circumference.

In the composition of the cathedrals of Ely, Lincoln, Canterbury, Norwich, Salisbury, Worcester, Durham, Peterborough, Winchester, and Worcester, the general proportion is determined by the first of the twenty-four divisions on each side of the centre, intersecting the great triangle; others vary considerably, but even where extensive alterations have taken place subsequent to the original design, regard has been had to the general first principle; the abbeys are all produced on the intersections of the triangles and their centres, and the subdivisions for the pillars are found in the central portion of the diagram, but may also be produced by the radial divisions on the breadth of the building, or that portion of the system used by Mr. Kerrich. Hence, whether the nave or choir be long or short, this vesica will determine the proportion of the subdivisions, the only variation being, that though the centres of the piers are taken for the longitudinal divisions, transversely they may be either on the centres or the inner or outer faces; this difference of proportion being purposely given to conceal the principle whereon they were based; this applies to the smaller parochial and other churches, with three, four, five, or more arches in their length, and will account for the extraordinary varieties of form in their plans; no two buildings were ever made alike, and for this reason, that it required less time to compose than to copy. From a determination to excel and surpass the works of their predecessors, and that the science was progressive, with the innumerable forms that could be produced by the intersections of the diagram, the architects could vary their compositions (retaining certain prescribed rules for their choirs) so long as they confined themselves to their extensions and alterations, to the limits of the system.

Having the plan disposed, the elevation was next considered, and proceeding with the double spherical triangle upon the centres longitudinally, and the variations before noticed, transversely, the various heights were obtained for the pillars; and sub-divisions, by the spherical triangles upon them, gave arches, capitals, bases, triforia, clerestories, tracery, mouldings of every description, and due proportion to each feature, which, on a future opportunity, I shall be glad to elucidate, particularly shewing the facility with which those features are obtained upon the diagram.

Upon this system, with great advantage and satisfaction, I have had erected the churches of Leven and Rise, in Holderness, Middleton, near Leeds, King Cross, in Halifax; and those of St. Paul, at Armitage-bridge, near to Huddersfield, and St. Philips, in Leeds, are rapidly advancing towards completion.

To be enabled fully to comprehend the system, much time must be devoted to the testing of existing models, though simple in its application: when once mastered, it will well repay the labour, however it may require the most indefatigable application. It is not like a machine, to be used without labour or trouble. Those who produced the beautiful works, not only of this, but most of the countries of Europe, at the same periods, though generally belonging to the monastic fraternities, were not wholly occupied with sacerdotal offices, nor was their time ever passed in indolence; they were the architects, the artists, the philosophers, and the *literati* of their day, and noble monuments have they bequeathed to posterity. This style of architecture is not incompatible with that of Greece or Rome,—all can be produced by this general system. Vitruvius has prescribed rules, and numerous authors have followed him; and I have every reason to believe, that this system will apply to the works of all ages that can be tested by sound geometric principles; and I shall not rest until I have endeavoured to prove this satisfactorily to its fullest extent.

R. Dennis Chantrell, *Architect.*

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St. Peter's-on-the-Wall, near Bradwell-juxta-mare, Essex.—At a meeting of the British Archæological Association, on the 11th instant, Mr. C. R. Smith exhibited drawings of the curious old building so called, and gave some particulars of his personal examination of it, and of the Roman remains in its immediate vicinity. This edifice, now a barn, had, it appeared, escaped the observation of antiquaries, although it exhibits some remarkable features. Morant briefly refers to it, and states, that in 1442 a jury found it had a chancel, nave, and small tower, with two bells (no traces of which now remain); that it was burnt, and the chancel and nave repaired: when it was founded, and by whom, he adds, they know not. The building at the present day exhibits, notwithstanding the dilapidations to which it has repeatedly been subjected, some interesting traces of its original character: among these the most remarkable is a circular window, neatly turned with Roman tiles; and indications of two others similarly worked, on the side fronting the sea. The entire materials of the building appear to have been taken from the Roman structures, which, by foundations yet remaining, covered the site. It stands on the western side of a Roman entrenchment, which is considerably elevated above the surrounding level, and slopes towards the sea.

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